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EXAMINER	
GUARINO, RAHEL	

ART UNIT	PAPER NUMBER
2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/766,347	CLEARY ET AL.	
	Examiner	Art Unit	
	Rahel Guarino	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claim 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takaki US, 5,999,559 in view of Chalmers US, 5,640,416.**

Re claim 1, Takaki discloses in a spread-spectrum receiver (fig. 3), a method for processing a received analog spread-spectrum signal (col. 1 line 25-30), comprising:

determining whether to attenuate the received analog spread-spectrum signal (col. 9 line 6-12 and fig. 6b; col. 8 line 34-36; the controller (16) adjust the G1 (attenuator) and/or G2 (RF-amplifier) based on error-rate calculator (15)).

based on the attenuation determination, selectively attenuating the received analog spread-spectrum signal to generate a selectively attenuated analog spread-spectrum signal (S3; col. 6 line 22-25 and (fig. 6a; col. 7 line 29-33)).

digitizing (10;"Takaki") the selectively attenuated analog spread-spectrum signal to generate a digital spread-spectrum signal (col. 5 line 45-50); does not teach filtering the digital spread-spectrum signal.

However, Chalmers teaches filtering (fig.6a) the digital spread-spectrum signal in an attempt to compensate for interference in the received analog spread-spectrum signal to generate a filtered digital spread-spectrum signal (col. 8 line 19-28);

Therefore, taking the combined teaching of Takaki and Chalmers as a whole would have been rendered obvious to one skilled in the art to modify Chalmers to filter the digital spread-spectrum signal for the benefit of eliminating the alias noise (col. 8 line 29-35).

and

de-spreading the filtered digital spread-spectrum signal to generate a de-spread digital signal (col. 8 line 61-67,"Chalmers"), wherein the attenuation determination is based on the amplitude of the digital spread-spectrum signal prior to the interference-compensation filtering and the de-spreading (col. 9 line 19-25, "Takaki").

Re claim 2, the modified invention as claimed in claim 1, wherein the filtering attempts to compensate for off-channel interference in the received analog spread-spectrum signal (col. 6 line 30-32,"Chalmers").

Re claim 3, the modified invention as claimed in claim 1, wherein the selectively attenuated analog spread-spectrum signal has a negative signal-to-noise ratio (SNR) (col. 1 line 13-24,"Takaki").

Re claim 4, the modified invention as claimed in claim 1, wherein:

the received analog spread-spectrum signal is attenuated when the amplitude of the digital spread-spectrum signal is greater than an upper threshold (fig. 4; col. Col. 7 line 64 to col. 8 line 4 and col. 8 line 33-36; "Takaki");

the received analog spread-spectrum signal is not attenuated when the

amplitude of the digital spread-spectrum signal is less than a lower threshold, wherein the upper threshold is greater than the lower threshold (fig. 5; col.8 line 17-21;"Takaki").

Re claim 5, the modified invention as claimed in claim 4, wherein the upper threshold is greater than the lower threshold by an amount greater than the level of selective attenuation in order to provide hysteresis in the attenuation determination (fig. 6; col. 8 line 53-67, "Takaki").

Re claim 6, the modified invention as claimed in claim 1, wherein:

the received analog spread-spectrum signal is a radio frequency (RF) signal (col. 4 line 67 to col. 5 line 2; the receiver is for the spread-spectrum signal, which is an RF signal,"Takaki"); and further comprising:

converting the RF signal to an intermediate frequency (IF) prior to the digitization (col. 6 line 33-37,"Takaki"); and converting the IF signal to baseband after digitization (col. 6 line 44-50,"Takaki").

Re claim 7, the modified invention as claimed in claim 6, wherein the filtering and the de-spreading are implemented at baseband (col. 4 line 60 to col. 5 line 6,"Chalmers").

Re claim 8, the modified invention as claimed in claim 1, wherein:

the filtering attempts to compensate for off-channel interference in the received analog spread-spectrum signal (col. 8 line 19-28,"Chalmers");

the selectively attenuated analog spread-spectrum signal has a negative signal-to-noise ratio (SNR) (col. 1 line 13-24, "Takaki");

the received analog spread-spectrum signal is attenuated when the amplitude of

the digital spread-spectrum signal is greater than an upper threshold (fig. 4; col. Col. 7 line 64 to col. 8 line 4 and col. 8 line 33-36; "Takaki");

the received analog spread-spectrum signal is not attenuated when the amplitude of the digital spread-spectrum signal is less than a lower threshold (fig. 5; col.8 line 17-21;"Takaki");

the upper threshold is greater than the lower threshold by an amount greater than the level of order to provide hysteresis in the attenuation determination (fig. 6; col. 8 line 53-67, "Takaki").

the received analog spread-spectrum signal is a radio frequency (RF) signal (col. 4 line 67 to col. 5 line 2; the receiver is for the spread-spectrum signal, which is an RF signal,"Takaki");

further comprising:

converting the RF signal to an intermediate frequency (IF) prior to the digitization (col. 6 line 33-37,"Takaki"); and

converting the IF signal to baseband after digitization(col. 5 line 44-50, "Takaki"); and

the filtering and the de-spreading are implemented at baseband (col. 5 line 43-56, "Chalmers").

Re claim 9, Takaki discloses a spread-spectrum receiver (fig.3), comprising:

a variable attenuator (3) adapted to selectively attenuate a received analog spread-spectrum signal to generate a selectively attenuated analog spread-spectrum signal (s3; col. 6 line 22-25 and (fig. 6a; col. 7 line 29-33)), does not teach an

analog-to-digital converter (ADC).

However, Chalmers teaches an analog-to-digital converter (ADC) adapted to digitize the selectively attenuated analog spread-spectrum signal to generate a digital spread-spectrum signal (col. 7 line 2-5);

Therefore, taking the combined teaching of Takaki and Chalmers as a whole would have been rendered obvious to one skilled in the art to modify Chalmers to utilize an analog-to-digital converter (ADC) signal to generate a digital spread-spectrum signal for the benefit of reduce timing (col. 4 line 1-4, "Chalmers").

an interference-compensation filter (fig. 4; 408) adapted to filter the digital spread-spectrum signal in an attempt to compensate for interference in the received analog spread-spectrum signal to generate a filtered digital spread-spectrum signal (col. 5 line 45-51,"Chalmers");

a digital processor adapted (col. 4 line 12-16; "Chalmers") to de-spread the filtered digital spread-spectrum signal to generate a de-spread digital signal (col. 8 line 61-67,"Chalmers"); and a controller adapted to control the variable attenuator based on the amplitude of the digital spread-spectrum signal prior to the interference-compensation filter and the digital processor (col. 9 line 19-25, "Takaki").

Re claim 10, the invention of claim 9, wherein the filter is adapted to attempt to compensate for off-channel interference in the received analog spread-spectrum signal(col. 6 line 30-32,"Chalmers").

Re claim 11, the modified invention as claimed in claim 9, wherein the selectively attenuated analog spread-spectrum signal has a negative signal-to-noise ratio (SNR)

(col. 1 line 13-24, "Takaki").

Re claim 12, the modified invention as claimed in claim 9, wherein:

the controller (16; "Takaki") is adapted to control the variable attenuator to attenuate the received analog spread-spectrum signal when the amplitude of the digital spread-spectrum signal is greater than an upper threshold (fig. 4; col. Col. 7 line 64 to col. 8 line 4 and col. 8 line 33-36; "Takaki") and;

the controller (16, "Takaki") is adapted to control the variable attenuator not to attenuate the received analog spread-spectrum signal when the amplitude of the digital spread-spectrum signal is less than a lower threshold, wherein the upper threshold is greater than the lower threshold (fig. 5; col.8 line 17-21;"Takaki").

Re claim 13, the modified invention as claimed in claim 12, wherein the upper threshold is greater than the lower threshold by an amount greater than the level of selective attenuation in order to provide hysteresis in the attenuation determination (fig. 6; col. 8 line 53-67, "Takaki").

Re claim 14, the modified invention as claimed in claim 9, wherein:

the received analog spread-spectrum signal is a radio frequency (RF) signal (col. 4 line 67 to col. 5 line 2; the receiver is for the spread-spectrum signal, which is an RF signal,"Takaki"); and further comprising:

a mixer (6) adapted to convert the RF signal to an intermediate frequency (IF) prior to the digitization(col. 6 line 33-37,"Takaki"); and a digital downconverter adapted to convert the IF signal to baseband after digitization (col.5 line 44-50,"Takaki").

Re claim 15, the modified invention as claimed in claim 14, wherein the filter and

the digital processor are adapted to operate at baseband(col. 4 line 60 to col. 5 line 6,"Chalmers").

Re claim 16, the modified invention as claimed in claim 9, wherein:

the filter is adapted to attempt to compensate for off-channel interference in the received analog spread-spectrum signal (col. 8 line 19-28,"Chalmers");

the selectively attenuated analog spread-spectrum signal has a negative signal-to-noise ratio (SNR) (col. 1 line 13-24, "Takaki");

the controller (16, "Takaki") is adapted to control the variable attenuator to attenuate the received analog spread-spectrum signal when the amplitude of the digital spread-spectrum signal is greater than an upper threshold fig. 4; col. Col. 7 line 64 to col. 8 line 4 and col. 8 line 33-36; "Takaki");

the controller (16,"Takaki") is adapted to control the variable attenuator not to attenuate the received analog spread-spectrum signal when the amplitude of the digital spread-spectrum signal is less than a lower threshold (fig. 5; col. 8 line 17-21;"Takaki");

the upper threshold is greater than the lower threshold by an amount greater than the level of selective attenuation in order to provide hysteresis in the attenuation determination(fig. 6; col. 8 line 53-67, "Takaki");

the received analog spread-spectrum signal is a radio frequency (RF) signal (col. 4 line 67 to col. 5 line 2); further comprising:

a mixer (6; "Takaki") adapted to convert the RF signal to an intermediate frequency (IF) prior to the digitization (col. 6 line 33-37,"Takaki"); and

a digital downconverter adapted to convert the IF signal to baseband after

digitization (col. 6 line 44-50," Takaki"); and the filter and the digital processor are adapted to operate at baseband baseband (col. 5 line 43-56, "Chalmers").

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rahel Guarino whose telephone number is 571-270-1198. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Payne David can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RG

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